

## Minutes of the 17<sup>th</sup> CEOS Plenary

Colorado Springs, Colorado  
November 19-20, 2003

19 November 2003

### **1. Welcome / Keynotes**

The 17<sup>th</sup> CEOS Plenary opened with “CEOS Looks at Planet Earth,” a movie highlighting the diversity of Earth observation data being collected and utilized by CEOS Agencies.

After the movie, CEOS Chair Gregory Withee introduced Mayor Lionel Rivera of Colorado Springs, who gave welcoming remarks.

Following Mayor Rivera, Vice Admiral Conrad Lautenbacher, U.S. Under Secretary of Commerce and NOAA Administrator, made opening remarks focusing on the important contributions being made by CEOS to the Earth observation community, advancing the goals of the Group on Earth Observations (GEO), and identifying long-term priorities involving CEOS.

NASA’s Associate Administrator for Earth Science, Dr. Ghassem Asrar, followed Vice Admiral Lautenbacher with welcoming remarks, highlighting various CEOS accomplishments over the past year and future opportunities for key contributions in the year to come.

Dr. Charles G. (Chip) Groat, Director of the U.S. Geological Survey, followed Dr. Asrar with opening comments as well as a discussion on international cooperation.

### **2. Adoption of Agenda**

The agenda was approved and adopted.

### **3. Record of 16<sup>th</sup> Plenary / Status of Actions**

Brent Smith of NOAA noted that the 16<sup>th</sup> Plenary Record was distributed by ESA and summarized the status of 16<sup>th</sup> Plenary actions, most of which had either been completed or were specifically being addressed in connection with 17<sup>th</sup> Plenary agenda items.

Action Item	Brief Description	Status
16-01	CEOS Chair to reflect the priorities identified in the new 5 Year Plan in the activities planned for 2003	Completed
16-02	CEOS Chair to reinforce the concept of the ‘past, present, and future’ troika of Chairmen to ensure continuity in CEOS objectives and plan implementation	Completed

16-03	CEOS Chair to write to Principals to reaffirm the importance of their active participation at CEOS Plenary meetings	Completed
16-04	CEOS Chair to investigate, with Working Group Chairs, mechanisms for closer involvement of the Working Groups in implementation of the CEOS 5 Year Plan – in connection with their respective work plans	Ongoing; WG Chairs invited to discuss status
16-05	CEOS Chair to apply for accreditation of CEOS to the CSD process as a ‘science and technology organisation’	Ongoing
16-06	CEOS Members and Associates, as appropriate, to strengthen their ties to international organizations with relevant research activities, and their national delegations to the UNFCCC in order to demonstrate better the value of satellite observations in meeting the needs of the research community and the Convention	Ongoing; CEOS agency initiated activities with WCRP are relevant
16-07	CEOS Members and Associates prepared to make active contributions to CEOS WSSD Follow-up modules to nominate representatives for the Ad-hoc WSSD Follow-up Team by 15 <sup>th</sup> December 2002	Completed
16-08	CEOS Members and Associates to provide details of their initiatives relevant to CEOS WSSD Follow-up modules to NOAA, as the Leader of the Ad-hoc WSSD Follow-up Team, by 15 <sup>th</sup> January 2003	Completed
16-09	CEOS Members and Associates to send the WGISS Chair any nominations for the next WGISS Vice-Chair by 31 <sup>st</sup> March 2003	Completed
16-10	CEOS Working Group chairs to investigate closer links between Working Groups and the IGOS Themes and to report to the 17 <sup>th</sup> CEOS Plenary	Completed: reports expected to 17 <sup>th</sup> Plenary
16-11	CEOS Members and Associates to send the WGCV Chair any nominations for the next WGCV Chair by 31 <sup>st</sup> January 2003	Completed
16-12	DMSG Chair to work with NASDA/NASA to migrate DMSG WWW site to CEOS WWW site	Ongoing
16-13	DMSG Chair to work with Don Hinsman to integrate DMSG hazards requirements into the CEOS/WMO requirements database	Ongoing
16-14	GCOS to send 3 <sup>rd</sup> draft of Second Adequacy Report to CEOS Chair for comment by 1 <sup>st</sup> December 2002	Completed
16-15	CEOS Chair to set up a team to review the Second Adequacy Report (providing initial comments within 2 weeks of receipt of the 3 <sup>rd</sup> draft)	Completed
16-16	CEOS Chair to request the IGOS-P Co-Chairs to present IGOS-P to UN COPUOS STC (Feb 2003)	Completed
16-17	Edoardo Marelli, in consultation with the CEOS Chair, to co-ordinate the lobbying by CEOS Members and Associates for: - the protection of active sensors in C-Band (WRC-03 AI 1.5); - a new allocation for active sensors in P-Band (WRC-03 AI 1.38); - the protection of the 24GHz band	Completed
16-18	CEOS Members and Associates to provide inputs to Edoardo Marelli by May 2003 in support of generation of a document by SFCG (by August 2003) indicating	Subject to

	priorities anticipated in the mid to long-term for frequency bands required for passive and active sensing	redefinition at 17 <sup>th</sup> Plenary
16-19	UNOOSA to discuss frequency protection at the next Inter-Agency Meeting (Jan 2003) and provide CEOS with a consolidated UN system recommendation concerning frequency protection	The UN interagency meeting agreed that there should be coordination among agencies with interests in specific parts of the spectrum.

Actions 16-05 and 16-12 were agreed to be ongoing actions and carried over as 17<sup>th</sup> Plenary actions.

Action Item	Brief Description of 17th CEOS Plenary Actions
17-01	CEOS Chair and Secretariat to apply, as appropriate, for accreditation of CEOS to the CSD process as a 'science and technology organisation' and to report to CSD actions undertaken by CEOS. (CEOS WSSD Team Leader)
17-02	NOAA to work with JAXA/NASA to migrate the DMSG WWW site to the CEOS WWW site. NOAA to work with Don Hinsman to integrate DMSG hazards requirements into the CEOS/WMO requirements database.

#### **4. CEOS Chair's Report**

CEOS Chair Gregory Withee then discussed how CEOS has played a significant role in coordinating outreach to both the satellite community and the whole Earth observation community over the past year. He further noted how as Chair he focused on addressing specific priorities, namely:

- Satellite data utilization
- Follow-up to WSSD – specifically in the areas of capacity building and water resources management
- IGOS Themes
- Harmonization

He thanked the CEOS Secretariat for their support of the past year, the Working Groups, Team Leaders, the future CEOS Chair, and his own staff for their contributions towards these priorities. In closing, he discussed his vision for CEOS' involvement in the Group on Earth Observations (GEO) and how he looked forward to working with and supporting the new CEOS Chair in addressing the challenges ahead.

After his presentation, BNSC proposed that CEOS continue to report at future Plenaries how it is coordinating its priorities and efforts with the CEOS 5 Year Plan.

Action Item	Brief Description of 17th CEOS Plenary Actions
17-03	Incoming Chair and Secretariat to review and make recommendations for updates to the CEOS Five Year Plan and discuss at the 18 <sup>th</sup> CEOS Plenary.

## **5. Utilization Team Report / Recommendations**

Professor John Townshend of the University of Maryland, Leader of the CEOS Data Utilization Team over the past year, reported various case studies and findings of the Team, building on the CEOS Special Event of the preceding day. He presented a proposed set of CEOS Utilization Principles and Recommendations for adoption by the Plenary. These Utilization Principles and Recommendations were adopted by the CEOS Agencies. They are provided below:

***CEOS ad hoc Team on Utilization***  
***Principles to Encourage Adoption of Remote Sensing***  
*All of the following were approved*

1. *Assurance of continuity*
2. *Need for adequate information systems and spatial data infrastructure*
3. *Space agencies accepting responsibilities for information systems*
4. *Enhancing data delivery systems*
5. *Ensuring that consistent long term data sets are created*
6. *Access to integrated assets of multiple agencies*
7. *Crucial role of research in stimulating innovative uses of remote sensing*
8. *Improved cooperation between space agencies*
9. *Sustained capacity building*
10. *Need for strategies to cope with the long time periods between problem identification and the arrival of an operational system*
11. *Recognition of new partners and the distinctive needs of new users*
12. *Political ownership of benefits*

*Note: The full text of the Utilization Principles is available at [www.ceos.org/utilization](http://www.ceos.org/utilization) .*

***CEOS ad hoc Team on Utilization***  
***Recommendations***  
*All of the following were approved*

1. *It is recommended that CEOS space agency members consider (a) making data streams available in real time whenever possible, and (b) provide any necessary preprocessing software, a benchmark data set and a focal point for questions.*

2. *Space agencies are urged to reevaluate the way in which they provide information about past, current and future systems including the provision of high quality up-to-date information concerning instrument performance especially calibration and product quality assessments. In this regard the maximum use should be made of the CEOS/WMO database.*
3. *CEOS space agency members need to develop information systems with more integrated catalog, search, ordering and retrieval mechanisms. It is recommended that the WGISS Working Group study how best to develop this incrementally for particular application fields building on experience gained in developing such capabilities with CEOP.*
4. *It is recommended that CEOS space agency members commit to seeking ways of increasing and improving partnerships, including those with NGOs and universities.*
5. *It is recommended that CEOS space agency members provide mechanisms to allow the creation of products developed at a regional level, such as global albedo, fire products, as well as other key global data sets.*
6. *CEOS agencies are invited to agree to make data easily and cheaply available, especially when it is in response to a specific request consistent with CEOS efforts to promote sustainable development in its widest sense.*
7. *It is recommended that wherever possible capacity building be integrated within specific projects and in particular in ones where sustained funding will be available following the success of the prototype phase. The ad hoc Working Group on Education and Training should be asked to take account of this recommendation in its work and report on its response to CEOS Plenary 2004.*
8. *It is recommended therefore that CEOS members make best efforts to adopt the GCOS Climate Monitoring Principles.*
9. *It is recommended that the Chairman of CEOS:*
  - *ensures that the subject is included on the agenda of future Plenaries;*
  - *gives instructions to the three Working Groups to give priority to assisting in the implementation of the Team's recommendations over the coming years; and*
  - *proposes to continue the subject as a priority theme for the coming year.*

In subsequent discussions, CEOS Agencies supported the continued focus on data utilization by CEOS and developed the following Plenary Actions.

Action Item	Brief Description of 17th CEOS Plenary Actions
17-04	CEOS Chair to continue to focus on satellite data utilization, arranging workshops as appropriate, and carrying forward CEOS Utilization Recommendations, in particular, Recommendation No. 9 on space agency cooperation. CEOS Agencies and CEOS Working Groups are asked to report to the 18 <sup>th</sup> Plenary on how they have implemented specific CEOS Utilization Recommendations.

17-05	CEOS to bring Utilization Report and Recommendations to the attention of OECD, recognizing their complementary initiative. (BNSC)
17-06	CEOS Members are urged, consistent with Plenary agreement, to maintain a continued responsibility to aid potential satellite data users to understand how space-derived data products and services can benefit them.

## **6. WSSD Follow-up Programme Report/Recommendations, and Reports of Modules and Africa Workshops**

CEOS WSSD Team Leader Michael Hales presented a summary of the CEOS WSSD Follow-up Programme and the progress that it had made over the past year, including the CEOS Special Event of the preceding day. As a part of his summary of the Capacity Building Workshop that took place in Stellenbosch, South Africa, the previous month, Hales requested CEOS approval of two workshop outcomes, including the adoption of eight CEOS Capacity Building Principles (provided below) and the approval/support of a CEOS African Advisory Group (AAG) which was formed at the workshop to provide input to CEOS regarding sustainable development activities.

The Capacity Building Principles were approved as follows:

### ***CEOS WSSD Follow-up Programme Capacity Building Principles***

*All of the following were approved*

- 1. As CEOS, through its Members and Associates, undertakes activities promoting sustainable development-oriented activities which include capacity building components, it should remember to acknowledge social, economic, and environmental applications that address locally-defined data and information needs, and take steps to promote access to data and information for sustainable development.*
- 2. By linking space agency resources (which are, at minimum, access to remote sensing expertise and education materials) to locally-defined needs, CEOS should promote the utilization of satellite information through training and education, provision of data and information, and/or partnerships with users.*
- 3. To support sustainable development, CEOS should build long-term and sustainable partnerships through its Members and Associates with relevant organizations and institutions, notably, universities, specialized and professional remote-sensing organizations, and government and non-governmental organizations.*
- 4. Through its unique and high-level membership, CEOS should assist local organizations to raise awareness of the importance of Earth observation data and information with their key local and governmental decision makers.*

5. *CEOS' capacity-building efforts should build on existing local programs, and engage existing organizations, always recognizing local capacity (e.g., in terms of expertise, communications infrastructure, and other resources) and respecting indigenous knowledge and local priorities.*
6. *Understanding that CEOS is not the only space-oriented organization interested in supporting capacity building efforts for sustainable development, CEOS should avoid duplication of effort by coordinating its activities with like-minded groups.*
7. *CEOS Members and Associates should appropriately model capacity building by encouraging – and when necessary financially supporting – involvement of developing country representatives in WSSD Follow-up Programme activities, and by participating in and supporting relevant forums and events.*
8. *CEOS' short-term and long-term education, training, and capacity building efforts should be complementary, comprehensive, and measurable to be valued and further supported by the CEOS membership.*

Module 2 Co-leader Dr. Josef Aschbacher of ESA presented a summary of the ESA TIGER Programme and its involvement with Module 2. Key milestones of the Module 2/ TIGER activities included the TIGER-1 Workshop in Rabat, the adoption of a “Water and Space” Action Plan, and the TIGER Plan of Implementation for 2003-05. These activities raised awareness in the African water resources management community of the usefulness of Earth observation, and announcements made in Rabat by JAXA, Radarsat and ESA regarding preferential EO data access in this context were welcomed. Other CEOS members are invited to join these activities, which have significant momentum. Module 2 Co-leader Chu Ishida described Japan's further involvement in Module 2 activities, including CEOP.

In subsequent discussion, CEOS Agencies welcomed the creation of the Africa Advisory Group and asked the WGEdu and WSSD Team to use the AAG to support their efforts in Africa. CEOS Members and Associates were similarly encouraged to involve the AAG in their respective activities, as appropriate. The following Plenary Actions were agreed:

<b>Action Item</b>	<b>Brief Description of 17th CEOS Plenary Actions</b>
17-07	CEOS Agencies, WGEdu, and WSSD Follow-up Programme Modules are encouraged to involve the CEOS African Advisory Group in the implementation activities.
17-08	CEOS Agencies invited to support joint CEOS WSSD Follow-up Programme Module 1&2 (Capacity Building and Water Resource Management) activities in 2004, and outreach efforts of both Modules to the donor community.
17-09	CEOS Chair to request CEOS Agencies to nominate leadership and members to the WSSD Follow-up Programme Module 4 (Climate Change).

## **7. Harmonization**

Dr. Tillmann Mohr, who holds responsibility for the leadership of the Coordination Group for Meteorological Satellites (CGMS) and who (along with the CEOS Chair) participates in the annual WMO Satellite Consultative Meetings, discussed the Chair's emphasis on the harmonization of efforts among the three key satellite coordination mechanisms: CEOS, CGMS and the WMO Consultative Meetings on Satellite Matters. He concluded this discussion with a focus on the objectives of the Group on Earth Observations (GEO).

## **8. Coordinated Enhanced Observing Period (CEOP)**

Professor Koike gave a short presentation on CEOP that included the IGOS Water Cycle Theme and the CEOS/WGISS Test Facility (WTF). Following brief discussion, CEOS Agencies were urged to offer continued support to CEOP development.

<b>Action Item</b>	<b>Brief Description of 17th CEOS Plenary Actions</b>
17-11	CEOS Agencies are urged to offer continued support to CEOP development.

## **9. Working Group on Information Systems and Services (WGISS) Report**

WGISS Chair Terry Fisher presented the WGISS Report to the Plenary. He provided an overview of the Working Group's activities, and noted that John Faundeen of USGS was nominated as the new WGISS Chair. The following recommendations from the WGISS report were all approved at Plenary:

### ***WGISS Recommendations for Plenary 17***

- *Approve*
  - *John Faundeen as WGISS Chair for the period November 2003 to November 2005*
  - *Ivan Petiteville as WGISS Vice-Chair for the period November 2003 to November 2005*
- *Information*
  - *WGISS has closed its CD-ROM Task Team but CNES will maintain <http://ceos.cnes.fr> and will distribute remaining copies of CD-ROM*
  - *WGISS has closed the CEOS Information Infrastructure Task Team but JAXA will continue to support CEOS Web site*
- *Recognize*
  - *NASA's contribution to the IDN*



## **10. Working Group on Calibration and Validation (WGCV) Report**

Yves-Louis Desnos presented the WGCV Report and also announced that Stephen Ungar of NASA was nominated to succeed him as the Working Group Chair. The report included a number of recommendations for Plenary (provided below), all of which were approved during the session.

### ***WGCV Recommendations for Plenary 17***

1. *WGCV recommends for consistency, to converge to the recently refined solar reference spectrum by G. Thuillier and encourages its use at the highest possible spectral resolution.*
2. *WGCV further recommends that instrument teams should post the exo-atmospheric solar irradiances they use, together with processing/resampling information, in a band-integrated form on the www (single spectrum recommended).*
3. *WGCV recommends to further support the in-depth study of the behaviour of satellite onboard calibration diffusers and their stability in the space environment,*
4. *The WGCV recommend that CEOS strongly encourages that full use of high latitude ground stations be maintained or restored to full operation.*
5. *The WGCV recommends that the Amazon rainforest area be used as one of the calibration transfer standards. The Amazon rainforest must be regularly measured to maintain its traceability to the internationally agreed standards.*
6. *WGCV recommends use of newly available spaceborne DEMs, where available and suitably validated, to replace existing coarse data sets for processing land and atmospheric data sets at the earliest opportunity.*

Yves-Louis Desnos requested that CEOS take up the following action on behalf of the WGCV.

<b>Action Item</b>	<b>Brief Description of 17th CEOS Plenary Actions</b>
17-12	CEOS Chair, in support of WGCV Chair, to contact CEOS Agencies to secure their active involvement in and follow-up to the 6 Recommendations from the WGCV accepted by the 17 <sup>th</sup> Plenary.

## **11. Ad hoc Working Group on Earth Observation Education and Training (WGEdu) Report**

In presenting the WGEdu Report, Sergio Camacho gave a brief overview of the activities of the Ad hoc Working Group over the past 2 years, with particular emphasis on the activities of the past year including its portion of the CEOS Special Event of the preceding day. He also presented the CEOS Principles of Satellite Data Provision in Support of Earth Observation

Education and Training for adoption by CEOS Agencies, and further requested CEOS Agencies to change the status of the WGEdu to a permanent Working Group. The Principles (provided below) and the permanent Working Group status were approved by the CEOS Agencies. The name of the Working Group was also changed to “CEOS Working Group on Education, Training, and Capacity Building,” and remains abbreviated as WGEdu.

***Resolution on Principles of Satellite Data Provision In Support of  
Earth Observation Education and Training***

- 1. CEOS Agencies should endeavour to provide on a sustainable basis comprehensive and complete data sets for education, training and capacity building purposes.*
- 2. When making data available for education, training and capacity building purposes, CEOS agencies should strive to adhere to the satellite data exchange principles in support of global change research (1992) and principles on satellite data provision in support of operational environmental use for the public benefit (1994), as previously adopted by CEOS.*
- 3. CEOS Agencies should provide access to data at the lowest possible cost and on a non-discriminatory basis.*
- 4. CEOS Agencies should provide easy and timely access to their data and information which are to be used for Earth observation education and training. This access can be through individual agencies’ distribution mechanisms or through mechanisms developed by CEOS, such as WSSD Follow-up Programme.*

As a result of discussions on the Ad hoc Working Group report and the Education and Training Data Principles, CEOS Agencies developed the following Plenary Actions:

Action Item	Brief Description of 17th CEOS Plenary Actions
17-10	All CEOS Agencies are urged to nominate representatives to the Working Group on Education, Training, and Capacity Building who are prepared to assist with the development and implementation of the WGEdu portal website, WGEdu Data Principles, WSSD Module 1 collaboration, and help maintain WGEdu linkages to the broader education, training and capacity building community.
17-13	WGEdu as a permanent Working Group will review its Terms of Reference (specifically noting any new emphases for the Working Group) and propose necessary revisions to them at the 18th CEOS Plenary.

**12. G-8/Earth Observation Summit/GEO Discussion**

Chip Groat gave a presentation on the background and history of the first Earth Observation Summit, held in July in Washington, and on formation of the Group on Earth Observations (GEO). Afterwards, other CEOS representatives instrumental in the development of GEO provided their thoughts on GEO and the potential relationship CEOS can build with it. These

representatives included Jose Achache, Tillmann Mohr, Yukio Haruyama, and Mothibi Ramusi of CSIR.

One key outcome of this discussion was the quick formation of a drafting team to develop a CEOS statement on the GEO Initiative to be immediately sent to the GEO Secretariat for consideration before the GEO Meeting in Baveno, November 28-29. The statement, as adopted by Plenary the following day, is provided below along with a letter signed by the CEOS Chairman (See Appendix 1).

It was further confirmed that the CEOS representatives to GEO Subgroups were as follows, with the addition that Stephen Briggs and Michael Hales would be nominated by the CEOS Chair as Co-Chairs of their respective subgroups:

- CEOS representative to GEO Secretariat: Brent Smith
- CEOS representative to Architecture Subgroup: Tillmann Mohr
- CEOS representative to International Cooperation Subgroup: Chu Ishida
- CEOS representative to Data Utilization Subgroup: Deren Li
- CEOS Co-Chair of User Requirements Subgroup: Stephen Briggs
- CEOS Co-Chair of Capacity Building Subgroup: Michael Hales

### ***CEOS Statement on the GEO Initiative***

*To be submitted for approval at 17<sup>th</sup> Plenary and then conveyed by CEOS Chairman, urgently;*

- (i) to IGOS-P 10bis; and subsequently*
- (ii) to the Co-Chairmen of GEO.*

*The 17<sup>th</sup> CEOS Plenary on 19/20 November, 2003, considered the future relations of CEOS with the GEO Process and agreed as follows:*

- 1) CEOS welcomes the Declaration of the July 2003 Earth Observation Summit, and undertakes to provide active and engaged support to the GEO process and to its sub-groups. As the GEO evolves, the space component will undoubtedly be an important element and here CEOS – with its space agency Members and Associates – is in an unparalleled position to play an important role.*
- 2) As an IGOS Partner CEOS fully supports the actions taken by the IGOS-P Co-Chairmen to bring to the attention of GEO Co-Chairmen and Sub-groups the significant contribution which IGOS-P has already made, and can in the future make, to the GEO Process. CEOS makes its contributions directly and through the IGOS Partnership.*
- 3) CEOS looks to GEO to provide the strong and effective political framework essential to realise an integrated global observing system or systems.*

- 4) *CEOS urges GEO, at the earliest possible stage, to ensure that the Framework Document:*
- a. clearly provides the political component essential for the success of the GEO process;*
  - b. makes full use of what has already been achieved, notably by the IGOS Partners; and*
  - c. clearly indicates the way ahead into the GEO Implementation Plan.*
- 5) *CEOS has already nominated members to join the GEO Secretariat and the five Sub-groups but, as a signal of the importance it attaches to this area, CEOS proposes that:*
- a. its representative on the User Requirements Sub-group should participate in the role of one of the Co-Chairs to this Sub-group, in parallel with Italy, Canada and the UK. This is an area in which CEOS has specific expertise and experience, not least through the CEOS/WMO requirements database which is of direct relevance to the GEO process as it has been in the IGOS process. CEOS considers that it can make an immediate and positive contribution in this area; and*
  - b. since capacity building is a critical component of sustainable development, the CEOS representative be added as a Co-Chair to the Capacity Building Sub-group.*

Action Item	Brief Description of 17th CEOS Plenary Actions
17-14	CEOS Chair to urgently put forward the “CEOS Statement on the GEO Initiative” to IGOS-P and to GEO by November 21, 2003, with copies also provided to CEOS Agencies. CEOS Chair to also nominate the existing CEOS representatives to the GEO User Requirements Subgroup and GEO Capacity Building Subgroup to become Co-Chairs for these Subgroups.
17-15	CEOS Chair, CEOS Secretariat, and CEOS Co-Chairs and representatives in GEO Subgroups and GEO Secretariat to track progress of CEOS inputs to the GEO process and provide interim reports during the course of the year to CEOS Members and Associates.

## 20 November 2003

### **13. Report on SIT Meetings and IGOS Partners Meeting**

CEOS SIT Chair Tillmann Mohr made a presentation on the outcome of the two SIT meetings held in February and October. He noted that following his two-year commitment as the CEOS SIT Chair, Yoji Furuhashi will become the new SIT Chair and Jose Achache the CEOS SIT Vice-Chair.

On behalf of the Chair, Brent Smith made a presentation recounting highlights of the June 5 IGOS Partners Meeting. A discussion on relating the IGOS Themes to CEOS and its Working Groups followed. The following action resulted from the discussion:

Action Item	Brief Description of 17th CEOS Plenary Actions
17-16	CEOS Agencies and Working Groups to continue focusing on appropriate linkages to implementation of IGOS Themes, with JAXA and WMO to prepare a document that summarizes the observation requirements of IGOS Themes. WCRP and GCOS will also be approached in this process. This document should be provided in draft by mid-January to CEOS Agencies in preparation for the CEOS SIT Meeting on February 3, 2004.

#### **14. 2<sup>nd</sup> GCOS Adequacy Report Update**

Paul Mason reported on how the GCOS 2<sup>nd</sup> Adequacy Report had been prepared over this past year at the request of the UN Framework Climate Change Convention. He noted that CEOS had a great deal of interaction to ensure that the role of satellites was properly incorporated. He also noted the expected use of the 2<sup>nd</sup> Adequacy Report to address observation issues at the upcoming COP-9 meeting.

#### **15. WCRP Space Mission Requirements Report**

Gilles Sommeria presented a report summarizing the requirements of the World Climate Research Programme with respect to Earth observation missions and the use of satellite data. He noted with thanks the support of the CEOS Chair and a number of CEOS Agencies in this undertaking. The report was prepared by a working group associating representatives from the various WCRP projects and space agencies. It contains a proposal to reanalyze climate data sets for the last 20-30 years, requiring coordinated action with space agencies.

#### **16. SBSTA/UNFCCC Update**

Linda Moodie noted CEOS' active role in promoting Earth observation from space within the activities of the UN Framework Climate Convention and the SBSTA (Subsidiary Body for Scientific and Technological Advice) group that prepares each Conference of the Parties. She noted that the 9<sup>th</sup> UNFCCC Conference of the Parties (COP-9) was coming up in 10 days. Chu Ishida proposed the following position be approved by CEOS Agencies as the CEOS position for these meetings. The position was approved and a corresponding action adopted.

#### ***CEOS Position and Action for COP-9 Agenda Item: Research and Systematic Observation***

- 1. CEOS appreciates GCOS efforts to develop the 2<sup>nd</sup> Adequacy Report and supports its findings.*

2. *CEOS considers it is a matter of urgency for the Parties to implement the proposed recommendations to improve the state of global observing systems for climate.*
3. *CEOS supports the Executive Summary conclusion that the Parties “should support the long-term operation of Earth observation satellites” and “should commit to the full implementation of integrated global observing systems for climate”.*
4. *CEOS agrees that there is a need for improved standards for climate observing systems, data and products, and that there is an urgent need for the Parties to adhere to the principles of full and unrestricted exchange of data for this purpose.*
5. *CEOS agrees with the Executive Summary conclusion that the Parties should support an internationally-coordinated approach to the development of an initial set of integrated global climate products, and make them accessible to all Parties. CEOS further agrees that developing a strategy for implementing these global products could be an important role for the Integrated Global Observing Strategy (IGOS) Partners, as appropriate.*
6. *CEOS agrees with the Executive Summary conclusion that improved observing techniques are needed and the transfer of proven research observation activities to sustained operational status needs to be encouraged.*
7. *CEOS agrees that adherence to the GCOS Climate Monitoring Principles (see Appendix 2) will enhance the value of the observations for all users, and encourages its members to follow them. In many respects these principles simply represent good management practice for observing systems.*

*Regarding COP-9 Decision on Systematic Observations:*

8. *CEOS Members and Associates, as appropriate, will work with their national delegations to the U.N. Framework Convention on Climate Change in order to gain support for a favorable decision on systematic observations at the ninth Conference of the Parties, December 2003.*
9. *CEOS agrees with the COP-9 draft decision for GCOS to coordinate the development of a phased five-to ten-year implementation plan for the integrated global observing systems for climate, in conjunction with efforts to develop a comprehensive, coordinated and sustained Earth observation system or systems, using a mix of high-quality satellite and in-situ measurements, dedicated infrastructure and targeted capacity-building, and supports GCOS in doing so.*
10. *CEOS invites GCOS to discuss how CEOS might facilitate input of the necessary expertise on satellite observations to the implementation plan (building on the dialogue established for the 2<sup>nd</sup> Adequacy Report) and notes its willingness to support reporting on satellite observation aspects to the UNFCCC process.*

*Regarding GEO:*

*11. CEOS recommends that the synergies between the GCOS implementation plan and the efforts of the Group on Earth Observations (GEO), which has broader global environmental monitoring objectives, should be fully exploited through coordination and collaboration at a Party and agency level.*

Action Item	Brief Description of 17th CEOS Plenary Actions
17-17	CEOS Members and Associates, as appropriate, to work with their national delegations to the UNFCCC in order to support a favorable decision for Earth observation at COP-9.

## **17. UNISPACE Follow-on Update**

Sergio Camacho provided a brief presentation on the status of follow-on activities to the recommendations of UNISPACE III, including the work of Action Teams established by the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS). He noted CEOS involvement in the work of COPUOS, in UN/OOSA-sponsored disaster management workshops, and in Action Team 7 on Disaster Management and Action Team 17 on Capacity Building.

## **18. CEOS-related Radio Frequency Issues**

David McGinnis briefly reported the results of the 2003 World Radio Conference, noting that most of items of interest to CEOS and the Space Frequency Coordination Group (SFCG) reached a satisfactory conclusion at the WRC-03. He discussed ongoing concerns with Ultra Wide Band (UWB) devices, and proposed a set of actions to CEOS agencies, provided below, that are reflected in an accompanying Plenary action item.

- Full support of CEOS member agencies for studies related to WRC-07 agenda items of importance to Earth observation satellites, particularly 1.20 -- Unwanted Emissions in passive bands used by sensors (e.g. AMSU, ATMS, CMIS) to determine vertical soundings
- Make CEOS member agencies aware of the importance of protecting exclusively passive bands from UWB devices
- Send document by 19 August 2004 to SFCG-24 indicating priorities for future frequency requirements for active and passive sensors

Action Item	Brief Description of 17th CEOS Plenary Actions
17-18	CEOS Agencies to take note of the Space Frequency Recommendations made to the 17 <sup>th</sup> Plenary, and CEOS Chairman to arrange for SFCG to be provided with a document indicating the perceived priorities in the mid-and long-term for frequency bands to be used for passive and active sensing by August 19, 2004, to be used at SFCG-24 in mid-September 2004.

## **19. Updates on Significant Events**

Verbal updates on current CEOS Agency activities were provided by representatives of: IOCCG, CSA, JAXA, DLR, NSC, USGS, and ESA (on GMES and the CEOS Handbook).

The following Plenary actions resulted from these updates and their subsequent discussions:

<b>Action Item</b>	<b>Brief Description of 17th CEOS Plenary Actions</b>
17-19	CEOS Agencies are requested to provide IOCCG a detailed list of the extraterrestrial solar flux spectrum values employed, and more importantly, the results of the convolution of the adopted spectrum with the spectral shape of the actual channels, as implemented by their respective sensors.
17-20	CEOS Agencies, which have not yet provided their input to the 2003 Update of the CEOS Handbook, to provide their input by 5 December 2003.

## **20. Upcoming Plenaries**

BNSC/Paula Freedman and CONAE/Conrado Varotto made brief presentations regarding their plans to host future Plenaries in 2005 and 2006, respectively. Both CEOS Agencies welcomed the opportunity to host CEOS and invited priority input from all CEOS Members and Associates.

## **21. Review of Actions**

The Actions of the 17<sup>th</sup> CEOS Plenary, as recorded by NOAA during the CEOS Plenary, were reviewed by all CEOS Agencies and approved with slight modification.

Greg Withee again thanked the outgoing Working Group chairs for their service, as well as Tillmann Mohr and his associates for their service in chairing SIT. ESA proposed and the Plenary approved the addition of EUMETSAT to the European portion of the permanent CEOS Secretariat.

## **22. Chair Handover**

Gregory Withee of NOAA asked Minister Xu of China to step forward to become the Chair of CEOS. Mr. Withee presented Minister Xu with a special plaque that holds the Chair's gavel and is inscribed with the names of all previous CEOS Chairs. Minister Xu received the Chair's gavel and plaque, and also presented Mr. Withee with a model of the Shenzhou spacecraft as a token of his appreciation.

Minister Xu then made a brief presentation, outlining his priorities as Chair for the upcoming year. He noted that he would: 1) continue to strengthen coordination towards a global comprehensive Earth observation system; 2) develop or continue supporting priority research areas in 2004 (including global change, disaster management, water resource management, data utilization, education and training); 3) support continuation of work for CEOS/IGOS



working groups and Themes; 4) plan the 18th Plenary, to be held in Beijing in November 2004, and the 20th Anniversary event of CEOS.

**23. Adjourn**

CEOS Chair Minister Xu declared the 17<sup>th</sup> CEOS Plenary adjourned.